

The opinion in support of the decision being entered today was ***not*** written for publication and is ***not*** binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* PATRICK MERTENS, BENNY JANSEN,  
WERNER VAN DE WYNCKEL and FRANK MICHIELS

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Appeal No. 1998-2337  
Application 08/651,442

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HEARD: May 8, 2001

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Before GARRIS, WARREN and OWENS, *Administrative Patent Judges*.

WARREN, *Administrative Patent Judge*.

*Decision on Appeal*

This is an appeal under 35 U.S.C. § 134 from the decision of the examiner finally rejecting claims 1, 3 through 6, 8 and 9. Claims 10 and 11 are also of record and have been withdrawn from consideration by the examiner under 37 CFR § 1.142(b). Claim 1 is illustrative of the claims on appeal:

1. Apparatus for performing electrolytic desilvering of a photographic processing solution comprising an electrolysis unit comprising a cathode, an anode and a reference electrode, said reference electrode being a pH sensitive electrode, and said apparatus including a potentiostatic unit for maintaining said cathode at a constant potential versus said reference electrode whereby adjustments for pH variations are automatically performed controlling said desilvering.

The appealed claims as represented by claim 1<sup>1</sup> are drawn to an apparatus comprising at least an electrolysis unit comprising at least a cathode, an anode and a pH sensitive reference electrode, and a potentiostatic unit for maintaining said cathode at a constant potential versus said reference electrode whereby adjustments for pH variations are automatically performed, wherein the apparatus can be used for electrolytic desilvering of a photographic processing solution. Appealed claim 4 specifies that the “pH sensitive reference electrode is a glass electrode.”

The references relied on by the examiner are:

Stricker	2,850,448	Sep. 2, 1958
Riseman et al. (Riseman)	3,306,837	Feb. 28, 1967
Freeman	4,255,242	Mar. 10, 1981
Biles et al. (Biles)	4,362,608	Dec. 7, 1982
Blake et al. (Blake)	4,406,753	Sep. 27, 1983

The examiner has advanced the following grounds of rejection on appeal:  
claim 3 is rejected under 35 U.S.C. § 112, first paragraph, enablement requirement (answer, page 7);<sup>2</sup>  
claims 1, 5, 8 and 9 are rejected under 35 U.S.C. § 102(b) as anticipated by Biles (*id.*, page 4);  
claim 3 is rejected under 35 U.S.C. § 103 as being unpatentable over Biles alone or in view of Freeman (*id.*, pages 4-5);  
claim 4 is rejected under § 103 as being unpatentable over Biles in view of Riseman (*id.*, page 5);  
claim 6 is rejected under § 103 as being unpatentable over Biles in view of Stricker (*id.*, pages 5-6);  
claims 1, 3 through 5, 8 and 9 are rejected under § 103 as being unpatentable over Blake in view of Riseman and Biles (*id.*, pages 6-7); and

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<sup>1</sup> Appellants, in their brief (page 5), reply brief (3) and supplemental reply brief (pages 2-3) have taken the position that, regardless of the grounds of rejection based on prior art, the appealed claims “will be argued as two groups” wherein claims 1, 3, 5, 6, 8 and 9 are argued separately from claim 4 (brief, page 5), and present arguments essentially with respect to claims 1 and 4, although other grounds which do not involve either of these claims are also addressed. The examiner so addresses appellants’ arguments in the answer (pages 3 and 9) and the supplemental answer (pages 2-3). Thus, we decide this appeal on appealed claims 1 and 4, although we have not overlooked appellants’ argument as to references applied in other grounds of rejection that do not specifically involve these two claims. 37 CFR § 1.192(c)(7) (1995). We note, however, that *all* of the grounds of rejection based on prior art would apply to claim 1, the broadest claim on appeal on which all other appealed claims directly or ultimately depend.

<sup>2</sup> The examiner withdrew the rejection of claims 1, 4 through 6, 8 and 9 on this ground (answer, page 3).

claim 6 is rejected under § 103 as being unpatentable over Blake in view of Riseman and Biles and Stricker (*id.*, page 7).<sup>3</sup>

We reverse.

Rather than reiterate the respective positions advanced by the examiner and appellants, we refer to the examiner's answer and supplemental answer, and to appellants' brief, reply brief and supplemental reply brief for a complete exposition thereof.

### *Opinion*

It is well settled that the examiner has the burden of making out a *prima facie* case of anticipation in the first instance by pointing out where each and every element of the claimed invention, arranged as required by the claim, is described identically in the reference, either expressly or under the principles of inherency. *See generally, In re King*, 801 F.2d 1324, 1326, 231 USPQ 136, 138 (Fed. Cir. 1986); *Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 1458, 221 USPQ 481, 485 (Fed. Cir. 1984). Whether the examiner has done so in the ground of rejection of claim 1 under § 102(b) as anticipated by Biles turns, of course, on the basic issues of the interpretation of the claim term "a pH sensitive electrode" and the claim phrase "a potentiostatic unit for maintaining said cathode at a constant potential versus said reference electrode whereby adjustments for pH variations are automatically performed controlling said desilvering" in appealed claim 1 in light of the written description in appellants' specification as it would be interpreted by one of ordinary skill in this art, *see generally, In re Morris*, 127 F.3d 1048, 1054-55, 44 USPQ2d 1023, 1027 (Fed. Cir. 1997), *In re Paulsen*, 30 F.3d 1475, 1479, 31 USPQ2d 1671, 1674 (Fed. Cir. 1994), and, as a factual matter, the teachings and inferences that one of ordinary skill in this art would have found in the disclosure of Biles, taking into account this person's own knowledge of the particular art. *See generally, In re Graves*, 69 F.3d 1147, 1152, 36 USPQ2d 1697, 1701 (Fed. Cir. 1995); *In re Preda*, 401 F.2d 825, 826, 159 USPQ 342, 344 (CCPA 1968).

In considering the disclosure of Biles, the definition of a term or the meaning of a phrase must be construed within the context of this reference as interpreted by one of ordinary skill in this art. *See*

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<sup>3</sup> The examiner has withdrawn the grounds of rejection based on DeMeester et al. and Glenn et al. (answer, page 3).

generally, *In re Salem*, 553 F.2d 676, 682-83, 193 USPQ 513, 518-19 (CCPA 1977). In this respect, if the definition of a term or the meaning of a phrase is not expressly stated, the same can be construed under the principles of inherency by establishing that the questioned structure or function would necessarily be present in the disclosure of the reference because inherency is not established by the “mere fact that a certain thing *may* result from a given set of circumstances.” *In re Oelrich*, 666 F.2d 578, 581, 212 USPQ 323, 326 (CCPA 1981), quoting *Hansgirk v. Kemmer*, 102 F.2d 212, 214, 40 USPQ 665, 667 (CCPA 1939). Where “the reference is silent about . . . [an] inherent characteristic, such gap in the reference may be filled with recourse to extrinsic evidence . . . [which] must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill.” *Continental Can Co. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991).

With respect to the requirement in claim 1 that “said reference electrode being a pH sensitive electrode,” appellants do not dispute that Biles describes the apparatus having a “pH . . . electrode of conventional construction” but contend that Biles does not disclose that the “pH electrode” is a “pH sensitive electrode” (brief, page 7). The examiner responds that “it is accepted principle that a pH electrode measures pH variation because it is responsive (or sensitive) to those variations,” and notes that appellants do not support their argument that a distinction in fact exists (answer, page 8). Appellants state in their reply brief that the “probe electrode of Biles, whether it be a pH electrode or another electrode, is not pH sensitive to the extent that it can be used with a potentiostatic unit to automatically adjust for pH variations, thereby controlling the desilvering,” pointing to the definitions of “an electrode and . . . the nature of a glass and hydrogen electrode” as well as “pH” in *Hawley’s Condensed Chemical Dictionary*, pp. 455 and 893-94 (11th. ed., 1987), along with the disclosure in their specification, to support the view that “[a] pH sensitive electrode need not be a pH electrode and a pH electrode need not be pH sensitive” (pages 2-3).

We find here that in their specification, appellants use the terms “pH sensitive electrode” (page 3, line 34) and “pH electrode” (page 3, line 40), but define the former as “all electrodes which show a pH dependence, e.g., a glass electrode, a hydrogen electrode, a quinhydrone electrode and an antimony electrode are useful” (page 4, lines 16-18).

The examiner, in the supplemental answer (page 2), finds that

[w]hile it is true that an electrode used to measure pH can be other than a pH sensitive electrode, the overwhelming incidence of measuring pH involves the use of pH sensitive electrodes (e.g., antimony electrode and glass electrode, with the glass electrode being the most common) such that “pH electrode” is virtually synonymous with “pH sensitive electrode”. Note that . . . [appellants set] forth the term “pH electrode” . . . and “pH sensitive electrode” . . . [in] the specification to mean the same thing. Thus, . . . [appellants’] contention that Biles’ “pH electrode” is not a “pH sensitive electrode” is contrary to the common usage and meaning of the term “pH electrode.”

Appellants, in the supplemental reply brief, “assert that the pH electrode of Biles is not pH sensitive, and even if it is pH sensitive, will not automatically adjust for pH variations in a desilvering process” (pages 1-2). Appellants further contend that the position of the examiner as stated in the supplemental answer should be restated to

more properly read “While it is true that a pH electrode is used for purposes other than measuring pH, it may under certain conditions be used to measure pH sensitivity.” pH and pH sensitivity is measured other than with a pH electrode. Moreover, it is also not correct that a “pH electrode” is virtually synonymous with “pH sensitivity electrode.” Certainly, this is not the case in Biles. [*Id.*, page 2.]

With respect to the requirement in claim 1 that the claimed apparatus include “a potentiostatic unit for maintaining said cathode at a constant potential versus said reference electrode whereby adjustments for pH variations are automatically performed controlling said desilvering,” appellants argue that “[t]here is no disclosure [in Biles] that . . . [the] probe electrode is to be used with a potentiostatic unit” and thus “[t]here can, therefore, be no disclosure” of a potentiostatic unit as specified in claim 1 (brief, page 7). The examiner, in response, explains that the disclosure at col. 5, line 65, to col. 6, line 54, particularly, col. 6, line 15, of Biles establishes that “[t]he circuit in Biles is clearly capable of operating as a potentiostatic unit to maintain the cathode at a constant potential” (answer, pages 8-9).

We have considered the two limitations in claim 1 in light of the written description in appellants’ specification as it would be interpreted by one of ordinary skill in this art, as taken in light of the arguments advanced by appellants and the examiner, and interpret claim 1 to require an apparatus having a reference electrode that is pH dependent in that it is sensitive to variations in pH, and is capable of functioning in this respect with the potentiostatic unit of the apparatus so that the cathode is

maintained at a constant potential versus the reference electrode in order that the electrolytic plating of a metal from a solution is automatically controlled when the apparatus is in operation. Accordingly, the burden is on the examiner to establish that the apparatus containing a “pH . . . electrode of conventional construction,” which is reference electrode or probe **34**, and which is connected to cathode **21** through reference circuit **46**, as disclosed by Biles (col. 4, lines 50-51, and col. 4, line 57, to col. 6, line 54) is in fact an identical description of an apparatus containing “a pH sensitive electrode” as the reference electrode and “a potentiostatic unit,” arranged as required by claim 1.

We are of the opinion that, on this record, the examiner has not carried his burden (answer, pages 4 and 8-9). In considering the whole of the disclosure of Biles, we find that the disclosure with respect to the reference electrode or probe, its interaction with the cathode and the result of that interaction with respect to the circuitry of the apparatus of the reference (e.g., col. 5, line 1, to col. 6, line 44), can be summarized by the stated objective that

[t]he other improvement comprises probe means in contact with the solution for providing *a* signal in response to presence of silver ions in the solution adjacent to the cathode, and means for repeatedly driving a plating current through the solution in response to *the* signal and for terminating the plating current after a *discrete period of time*, until the probe means again provides *the* signal in response to presence of silver ions adjacent to the cathode. [Col. 3, lines 6-14; emphasis supplied.]

Thus, on this record, it reasonably appears that one of ordinary skill in this art would find from the operation of the apparatus as described in Biles, that the reference electrode or probe, regardless of construction, and the circuitry to which it is attached do no more than trigger the delivery of plating current for a set period of time in response to the presence of silver ions, such that the reference describes to that person no more than a conventional pH electrode which provides a single signal in response to the mere presence of silver ions, and which is attached to circuitry that activates a pre-set plating current in response to that signal, wherein the plating current would flow for a pre-set period of time.

We find that the examiner has not established by explanation or evidence that in the context of this disclosure of Biles, the “pH electrode . . . of conventional construction” would reasonably be interpreted by one of ordinary skill in this art to be a “pH sensitive electrode,” or that the circuitry to

which it is attached would reasonably be interpreted by this person to be “a potentiostatic unit” arranged as required by claim 1, either expressly or under the principles of inherency. The examiner’s allegation that a “pH sensitive electrode” is used as a “pH electrode” in a number of instances and thus the “common usage and meaning” of the latter term includes the former structure, made in response to appellants’ arguments to the contrary, merely raises the possibility that Biles describes the specified “pH sensitive electrode,” which, of course, is not sufficient to establish that such a description would necessarily result from, that is, be inherent in, the disclosure of the reference. *Oelrich, supra*. In similar respects, the examiner has not explained how the circuitry described by Biles is in fact identical to and capable of performing the same function of automatically adjusting for pH variations as “a potentiostatic unit” specified in claim 1.

Accordingly, we find that the examiner has not made out a *prima facie* case of anticipation of the claimed apparatus encompassed by claim 1 under § 102(b) over Biles, and thus we reverse this ground of rejection.

Turning now to the grounds of rejection under § 103, it is also well settled that a *prima facie* case of obviousness is established by showing that some objective teaching, suggestion or motivation in the applied prior art taken as a whole and/or knowledge generally available to one of ordinary skill in the art would have led that person to the claimed invention as a whole, including each and every limitation of the claims, without recourse to the teachings in appellants’ disclosure. *See generally, In re Rouffet*, 149 F.3d 1350, 1358, 47 USPQ2d 1453, 1458 (Fed. Cir. 1998); *Pro-Mold and Tool Co. v. Great Lakes Plastics Inc.*, 75 F.3d 1568, 1573, 37 USPQ2d 1626, 1629-30 (Fed. Cir. 1996); *In re Oetiker*, 977 F.2d 1443, 1447-48, 24 USPQ2d 1443, 1446-47 (Fed. Cir. 1992) (Nies, J., concurring); *In re Fine*, 837 F.2d 1071, 1074-76, 5 USPQ2d 1596, 1598-1600 (Fed. Cir. 1988); *In re Dow Chem. Co.*, 837 F.2d 469, 473, 5 USPQ2d 1529, 1531 (Fed. Cir. 1988). The examiner has applied Biles in these grounds of rejection as if the reference would have reasonably disclosed an apparatus containing “a pH sensitive electrode” as the reference electrode and “a potentiostatic unit” arranged as required by claim 1 to one of ordinary skill in this art, which position is not established on this record for the same reasons we discussed above. *See generally In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995), citing *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ

769, 775 (Fed. Cir. 1983) (“The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness.”). In the absence of an explanation by the examiner, we find no disclosure in Blake, Freeman, Riseman or in Stricker, separately and as combined with Biles by the examiner which would cure the deficiencies we have identified in Biles. Indeed, with respect to the ground of rejection of claim 4, the examiner has not explained why one of ordinary skill in this art would have found in the combined teachings of Biles and Riseman the objective teaching, suggestion or motivation to use the pH sensitive glass electrode of Riseman as the “pH electrode . . . of conventional construction” in the apparatus of Biles, including the interaction between this electrode and the circuitry disclosed in Biles which controls the flow of the plating current. In similar manner, the two grounds of rejection based on the combined teachings of at least Blake, Riseman and Biles also requires that Biles indeed possess the disclosure as relied on by the examiner, because otherwise there is no objective teaching, suggestion or motivation in the combined teachings of these references to substitute the pH sensitive glass electrode of Riseman for the conventionally constructed calomel reference electrode of Blake.

Accordingly, we find that the examiner has not make out a *prima facie* case of obviousness of the claimed apparatus encompassed by claim 1 under § 103 over the combined teachings of Biles and the other references as applied, and thus we reverse these grounds of rejection.

Finally, with respect to the ground of rejection of claim 3 under § 112, first paragraph, it is well settled that under this statutory provision, the examiner has the burden of providing a reasonable explanation, supported by the record as a whole, why the assertions as to the scope of objective enablement set forth in the specification are in doubt, including reasons why the description of the invention in the specification would not have enabled one of ordinary skill in this art to practice the claimed invention without undue experimentation, in order to establish a *prima facie* case under the enablement requirement of the first paragraph of § 112. See *In re Wright*, 999 F.2d 1557, 1561, 27 USPQ2d 1510, 1513 (Fed. Cir. 1993); *In re Strahilevitz*, 668 F.2d 1229, 1232, 212 USPQ 561, 563 (CCPA 1982); *In re Marzocchi*, 439 F.2d 220, 223-24, 169 USPQ 367, 369-70 (CCPA 1971). It is further well settled that “[a]n inventor need not . . . explain every detail [of the invention] since he is speaking to those skilled in the art. What is conventional knowledge will be read



into the disclosure. Accordingly, an applicant's duty to tell all that is necessary to make or use varies greatly depending upon the art to which the invention pertains." *In re Howarth*, 654 F.2d 103, 105, 210 USPQ 689, 691 (CCPA 1981). Here, the examiner has merely pointed out that "[t]he specification does not appear to contain details of the extra potentiostatic control unit for compensating ohmic drop" specified in claim 3 (answer, page 7; see also page 11), while appellants counters that those in the art know "what a potentiostatic control unit is" and how it can be used (brief, page 11; see also reply brief, page 3). We find that the examiner has not provided a reasonable explanation, supported by the record as a whole, why the disclosure of the "extra potentiostatic control unit for compensating for ohmic potential drop" in the specification (e.g., page 6, lines 2-13) would not provide sufficient details of the claimed invention encompassed by claim 3 so as to enable one of ordinary skill in this art to practice the claimed invention without undue experimentation, as appellants contend. Accordingly, the examiner has not made out a *prima facie* case of nonenablement and thus we must reverse this ground of rejection.

The examiner's decision is reversed

*REVERSED*

Appeal No. 1998-2337  
Application 08/651,442

BRADLEY R. GARRIS  
Administrative Patent Judge

CHARLES F. WARREN  
Administrative Patent Judge

TERRY J. OWENS  
Administrative Patent Judge

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Breiner & Breiner  
115 North Henry Street  
P.O. Box 19290  
Alexandria, VA 22320-0290